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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/620,184

07/15/2003

Mitsuru Ozono

35857

8698

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7590

06/30/2006

PEARNE & GORDON LLP

1801 EAST 9TH STREET

SUITE 1200

CLEVELAND, OH 44114-3108

EXAMINER

OSELE, MARK A

ART UNIT

PAPER NUMBER

1734

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/620,184	Applicant(s) OZONO ET AL.	
	Examiner Mark A. Osele	Art Unit 1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>07152003, 09222003, 06282004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,709,543 (Kurosawa). Kurosawa shows a method and apparatus for picking up a semiconductor chip adhered to a sheet by using a pick up head comprising: a sheet exfoliating step for abutting a suction surface of a sheet exfoliation mechanism, 24a, 24b, 24c, against a lower surface of the sheet, 22, and for performing vacuum-sucking through the suction surface thereby to exfoliate the sheet from the semiconductor chip, 1 (See Fig. 16); and a sucking and holding step of sucking and holding an upper surface of the semiconductor chip from the sheet by the pick-up head, 10, to pick up the semiconductor chip (column 13, lines 45-50), wherein in the sheet exfoliating step, the semiconductor chip, 1, adhered to the sheet, 22, is bent and deformed in a continuous bent range from an outer peripheral portion of one side of the chip to an outer peripheral portion of another side of the chip to exfoliate the sheet from a lower surface of the semiconductor chip (See Figs. 19A, 20A, 21A; column 17, lines 13-27, 35-45).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Publication 2001-118862 (Akira) in view of U.S. Patent 6,709,543 (Kurosawa). Akira shows a method and apparatus for picking up a semiconductor chip, 3a, adhered to a sheet, 1, by using a pick up head, 4a, the apparatus comprising: a holding table for holding the sheet, 1, a sheet exfoliation mechanism, 8a, with a suction surface includes a plurality of grooves, 7a, and a boundary portion which partitions the adjacent grooves wherein the boundary portions are abutted against a lower surface of the sheet, 1, and support the sheet during vacuum-sucking through the suction surface to exfoliate the sheet from the semiconductor chip, 3a (See Fig. 3). Akira fails to show the semiconductor chip to be bent.

Kurosawa teaches that it has become desirable to make semiconductor chips thin in order to fit into thin packages (column 2, lines 6-10) and that thin semiconductor chips are deformed together with the adhesive sheet when suction is applied to the sheet to exfoliate the sheet from the chip (column 2, lines 17-22, 30-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use thin semiconductor chips in the apparatus of Akira because Kurosawa teaches the

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demands of industry for thin chips. Furthermore, the thin chips of the references as combined would be deformed along with the adhesive sheet during the exfoliation vacuum-sucking step of Akira as shown by Kurosawa.

Kurosawa also shows the conventional arrangement of a sheet exfoliation mechanism located beneath a sheet holding table and moving the sheet exfoliation mechanism upward to abut against the adhesive sheet (Figs. 18A, 19A, 20A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to locate the sheet exfoliation mechanism of Akira beneath the sheet holding table because this conventional arrangement allows for movement of all portions of the sheet over the exfoliation mechanism to exfoliate all of the chips from the adhesive sheet.

Regarding claims 7 and 8, the semiconductor chip of the references as combined is rectangular and corner portions of the chip are not positioned directly above the boundary portions.

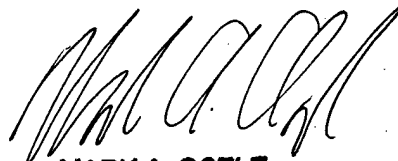
Regarding claim 9, Kurosawa further shows a plurality of different exfoliating tools for different types of semiconductor chips. It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the exfoliating tools of the references as combined freely interchangeable on the exfoliation mechanism to make the apparatus flexible as different chips or adhesive sheets are used without requiring a completely different apparatus for each type of chip.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark A. Osele whose telephone number is 571-272-1235. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla can be reached on 571-272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



MARK A. OSELE
PRIMARY EXAMINER

June 22, 2006